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5. Database Management

5.1 HARP Database Management Background

The Hotspots Analysis and Reporting Program (HARP) database is designed to hold three types of data: point sources (facilities), areawide (regional) sources, and sensitive receptors. Point sources are discrete sources and are uniquely identified by IDs – FACIDs. Within a discrete point source, an emission release can either be point, volume, area, or open pit. Areawide sources are always considered to be district-wide sources, such as paved and unpaved road dust, and consumer products, which are not associated with a specific facility. Sensitive receptors are identifiable subsets of the general population that are at greater risk than the general population to the toxic effects of a specific air pollutant (e.g., infants, asthmatics, elderly).

The database is also divided into reporting years storing discrete information for each reporting year including stationary point, area, mobile, and natural sources. The data within the database is saved in tables. These tables match the tables in the Air Resources Board's (ARB) CEIDARS (California Emissions Inventory Data Analysis and Reporting System) database.

See Appendix A for a set of simple “how to” guides that are intended to assist users with some basic HARP applications and chapter 4 for an example tutorial.

5.2 What is CEIDARS?

CEIDARS (California Emissions Inventory Data Analysis and Reporting System) is a database management system developed by ARB to track statewide pollutant emissions. The current implementation, known as CEIDARS 2.5, combines both toxics and criteria pollutants into a single database, and is a major upgrade to the previous CEIDARS system. In addition to the emissions inventory, CEIDARS is designed to store facility risk data and other mandated information such as the facility status and area of designations.

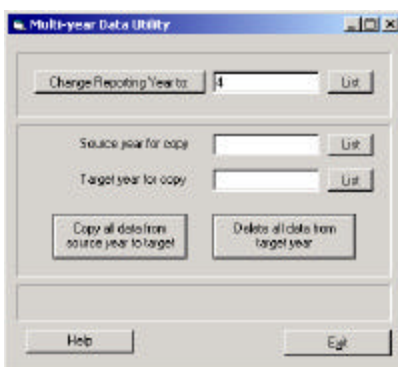
5.2.1 What is CEIDARS-Lite?

The emission inventory component of HARP is a database (known as CEIDARS-Lite) that is nearly identical in structure to the CEIDARS 2.5 database. The CEIDARS-Lite database is utilized by HARP to facilitate transmission of data from the air districts to the ARB CEIDARS 2.5 database. It will also promote consistency in gathering and reporting of emissions data by the districts. HARP provides functions for entering and editing facility emissions data, generating reports, and exporting or importing data in a transaction file format that is compatible with CEIDARS 2.5.

CEIDARS-Lite is one component of HARP. HARP also provides functions for dispersion and health risk analysis, which are fully integrated with CEIDARS-Lite. This allows users to carry out a complete health risk analysis following the Office of Environmental Health Hazard Assessment (OEHHA) guidelines for any facility in the database with minimal reentry of data.

5.3 Multi-year

HARP can keep track of multiple reporting years within the same database. For the purpose of data editing and reporting, each year is completely independent, just as if it were contained in a separate database altogether. The multi-year utility functions of HARP make it possible to manipulate data from different years. To access these functions, select **Utilities/Multi-year** from the main menu. This will cause the following dialog window to be displayed.



To change the current reporting year, enter a year in the text box at the top of the window and press the button labeled **Change Report Year to**. Henceforth, all data editing and reporting functions will utilize data from that year. HARP will remember the current reporting year even if you exit HARP and reboot the computer. The current reporting year will remain the same until you repeat the steps described here to change it.

If you cannot remember what reporting years are stored in the database, you can press the top button labeled **List** next to the reporting year box to select one of the years stored in the database.

You can copy all data from one reporting year to another by entering the year you want to copy data from in the box labeled **Source year for copy**, and entering the year you want to copy data to in the box labeled **Target year for copy**. Then press the button labeled **Copy all data from source year to target year**. This provides a convenient way to start a new reporting year and initialize it with data from a previous year. Any differences between the two years can then be reported using the **Compare Two Years** report (select **Reports/Compare Two Years** from the main HARP window).

When changing to a new reporting year, you do not necessarily have to specify a year for which you currently have data. If there is no data for the year you specify, it is equivalent to creating an empty database for that year. This can be a convenient way to create a “scratch” area to enter real or fictitious data for test purposes. Simply specify a nonsensical reporting year such as 1001. Reporting years can range between $-32,767$ and $+32,767$. However, any year with a negative number may be overwritten when the program is updated. You can then edit data for that year, copy data to that year from some other year, or import data from transaction files into that year without worrying about corrupting your actual permanent data. When you want to remove one of these scratch years from the database, enter the year in box labeled **Target year**

for copy and then press the button labeled **Delete all data from target year**. (It would be wise to occasionally backup your entire database, which is contained in the file HARP.MDB.

5.4 Point and Areawide Sources

Stationary point sources are discrete sources that can be identified by locations and are often permitted by local air districts. These sources consist of facilities, stacks (emissions releases), devices, processes, and pollutant emissions. Within each stationary point source, there can either be an ISC point emission release, a volume source, an area source such as a pond, or an open pit.

Areawide (Regional) sources are inventoried at a county level and are not identified as discrete sources and can either be stationary aggregated point or areawide sources. Examples of stationary aggregated point sources are internal combustion (IC) engines such as pumps from farms, and degreasers from auto repair shops. These sources are stationary yet are small enough in emissions and therefore are not included in the districts' point source inventory. Other sources such as paved and unpaved roads, and consumer products are classified as areawide sources. These sources are uniquely similar and are grouped together for inventory purposes. CEIDARS-Lite is expanded to include areawide sources as emission inventory database tools. Users can either enter and/or edit point or areawide sources using CEIDARS-Lite. However, HARP does not use areawide sources for dispersion or risk analysis due to the nature of these sources.

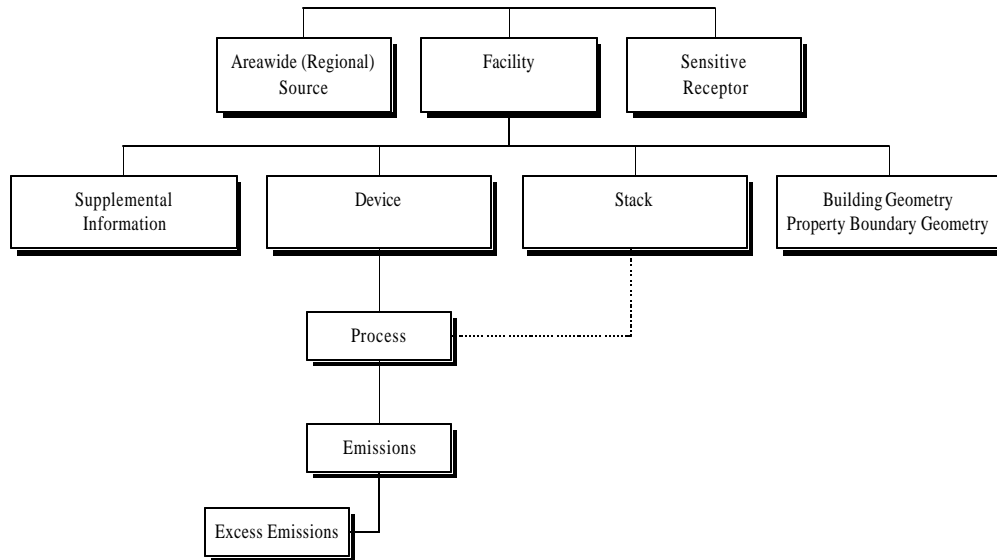
When you select **Edit Data/Facilities and Emissions** you are always editing discrete (point) source data associated with a single facility. If you want to edit areawide source data you must select **Edit Data/Area wide (Regional) Sources** from the main menu. When you do this, HARP will take you directly to the process data window. Internally, all process and emissions records for areawide sources are associated with a specific COABDIS (County, Air Basin, District), a fictitious facility, whose ID is 0, and a fictitious device, whose ID is also 0.

For discrete (point) sources, the process ID must be an integer number from 1 to 99. For areawide sources the process ID must be an EIC code from the EIC table. Areawide sources are assigned by the ARB and therefore can only be edited but not added. If the districts need to create an areawide source category, contact the Emission Inventory Branch of the ARB for assistance. For more information on areawide sources see section 5.15.

5.5 Organization of the Point Source

In order to better understand the organization of HARP, it helps to understand the hierarchical organization of the underlying database. This is illustrated in the following diagram.

HARP (CEIDARS-Lite) Database Organization



Most data is associated with facilities. Therefore the most common starting point for entering data is the facility database. To enter the facility database, select ***Edit Data/Facilities and Emissions*** from the main menu. Submenus provide access to data related to devices, processes and emissions. In order to enforce the hierarchical structure of the database, you must specify a facility before editing device data, and you must specify a device before editing process data, and so on. Everything from the facility-editing window on down to emissions is essentially a replication of the CEIDARS 2.5 database.

Data which is not represented in the CEIDARS 2.5 database, but which is nevertheless required for risk assessment, is also accessed through submenus of the ***Edit Data*** menu option. These include sensitive receptors, building geometries and property boundaries. The building geometry data is necessary for the downwash calculations related to dispersion analysis, and the property boundaries data is necessary for prioritization and risk analysis.

Appendix C includes the CEIDARS 2.5 data dictionary and Appendix D includes transaction format documents. Except for the reporting year that HARP uses as a key field, the CEIDARS data dictionary is essentially the same as in the HARP database.

5.6 Facility Data Window

The facility data window is used to edit data contained in the facility table. To edit facility data select **Edit Data/Facilities and Emissions** from the main window. The HARP database comes without actual facility and emissions data. The only data in the database is fictitious data for the tutorial. When you select a new reporting year and do not copy any data into that year, HARP will display a warning message and the facility window will be blank. You must add a facility to the database before you can enter any device, process, emissions, stack, or supplemental data. To add a facility, refer to section 5.9.

The facility data window appears as shown below. The fields highlighted in yellow are the minimum input required to perform dispersion and risk analysis. The other fields are required by ARB for emissions reporting.

Facility Data - YEAR 2002 ABC CHEMICAL 1234 XX STREET SAN DIEGO

Add Delete Save List Undo Next Previous Goto Stacks Device Supplemental Geometry Calculate Help Exit

Facility Identification (1)

Name: ABC CHEMICAL ID: 3002 Last Update: 9/23/2003 4:56:10 PM

County: SAN DIEGO 37

Air Basin: SAN DIEGO SD

District: SAN DIEGO COUNTY APCD SD

Page 1 | Page 2 | Page 3 | Page 4 | Page 5 |

Address

Address: 1234 XX STREET

City: LA JOLLA Zip: 92037 Zip Ext:

Fees and reporting (1)

Toxic Program Status (FEE_CAT): A - prioritization score > 10.0 CERR:

Year of Emissions Data: 2001 ☒ CHAPIS ☐ Small Commercial ☐ Maintained by District

Year of Risk Data: 2001 ☐ Location only SIC: 2816

Updating Code (FAC_UPDATE): CHS - CHAPIS Update NAICS:

Location

East: 475 Datum: NAD27

North: 3633.3 Coord. System: UTM

Units: km Zone: 11

Locating Method: 023 Spheroid: CLARKE1866

Change Coordinate System

The following sections describe the menu options and data fields.

5.7 Data Editing Guidelines

5.7.1 Shortcut Keys

HARP was designed so that most functions can be invoked without using the mouse. Any menu item or button whose name contains an underlined letter can be activated by holding down the Alt key and pressing the underlined letter. Certain menu items, such as the Delete function, do not have shortcut keys, so that they will not be inadvertently activated by mistyping.

When editing data the tab key can be used to move to the next field on the window. The Shift-Tab key combination can be used to move to the previous field.

5.7.2 Common Data Editing Menu Items

Some menu options, which are common to all data entry screens, are described in this section. These menu options apply to facility data, device data, process data, emissions data, supplemental data, stack data, and sensitive receptor data.

Add

The **Add** menu option is used to add a new record to the database. The type of record added depends on which data entry form is currently displayed. When adding a new record, you will immediately be prompted to provide values for any item that is part of the unique key for that record. Where appropriate, a button will be shown that can be used to select from a list of legal entries. Each record that is added must have a unique key, which is comprised of several of the fields. For example, the key for a new facility consists of facility ID, county, air basin and district. If the key field values that you provide are not unique, an error message will be displayed and the record will not be added. When adding a new record by selecting the **Add** menu option, all fields on the new record will be cleared.

Duplicate

The **Duplicate** menu option is similar to the Add menu option, except that the data fields are not cleared from the data entry window before adding the new record. This provides a way to copy all fields except the key fields from an existing record to another new record. The duplicate function only duplicates the record that is currently shown. In other words, duplicating a facility record does not cause HARP to duplicate the subordinate stack, device, process and emissions data.

Save

The Save menu option causes any changes which you have made to the field values on a data editing window to be immediately saved to the database. You cannot cancel your changes after the record has been saved. Before the record is saved, it is validated by HARP to make sure that values you provide are appropriate. If the validation fails, HARP will display a warning message telling you the invalid fields, and the record will not be saved. If you make a serious error and want to cancel your changes, you can do so by selecting the **Undo** menu option.

List

The List menu option will display a list of records from the table currently being edited. You may select from the list to display that record in the editing window.

Next

The *Next* menu item moves to the next record in the current table. If no more records are available then a warning message will be displayed and the last available record will be displayed.

Previous

The *Previous* menu item moves to the previous record in the current table. If the first record in the database is already displayed then a warning message will be displayed.

Goto/First

This menu option will move the data entry window to the first available record in the database.

Goto/Last

This menu option will move the data entry window to the last available record in the database.

5.7.3 Help Buttons

The data editing windows contains numerous buttons that you can use to get assistance in entering values in certain fields. Each button appears next to the data field to which it refers. The function of the button depends on the data field. In most cases the button calls up a list of acceptable values for that field. Each of the help buttons can be activated from the keyboard by using the shortcut key corresponding to the underlined letter on the button caption.

5.7.4 Tab Keys

The tab key can be used to move the cursor sequentially through all of the editable fields on a data entry window. The Shift-tab key combination moves the cursor sequentially in the backwards direction. The tab key can be used in combination with the Shortcut keys (refer to section 5.7.1) to perform data entry without using the mouse.

5.7.5 Validation

Data that you enter in one of the data editing windows is validated at the time the record is saved. Validation consists of checking each of the input data values against the allowable values or range of values. Validation occurs when one of the following events occurs:

- 1) You select the *Save* menu option. If the validation fails, HARP will display a message describing the nature of the failure, and the record will not be saved.

- 2) You select the *Exit* menu option after making changes. In this case HARP will first prompt you to determine whether you want to save the changes. If you answer no, no validation will be performed and your changes will be lost. If you answer yes, the validation of your input data will be done before the record is saved. If the validation fails, HARP will display a message describing the nature of the failure, the record will not be saved and the window will remain as it was. HARP will not exit a data-editing window until changes that you have made have been correctly validated and saved or you have selected *Exit* and responded that you do not wish to save your changes.

5.8 Facility Data Field Descriptions

The following is a description of the data fields on the facility editing windows.

Facility Name	The descriptive name of a facility. The name can be any alphanumeric string up to 60 characters long.
Facility ID	A positive integer ID, up-to nine digits which uniquely identifies each facility within a particular COABDIS. A facility ID must be specified at the time a facility is added to the database. After that it cannot be changed.
County Name	The name of a county containing each facility. The county name is taken automatically from the COABDIS table.
County ID	A positive integer ID, up-to two digits which uniquely identifies a county. A county ID must be specified when a facility is added to the database and must correspond to one of the counties in the COABDIS table.
Air Basin	A two- or three-character field that uniquely identifies an air basin. An air basin must be specified when a facility is added to the database and must correspond to one of the districts in the COABDIS table.
Air Basin Name	The name of the air basin containing a facility. An air basin must be specified when a facility is added to the database. The air basin name is taken automatically from the COABDIS table.
District	A two- or three-character field that uniquely identifies a district. A district must be specified when a facility is added to the database and must correspond to one of the districts in the COABDIS table.
District Name	The name of a district containing each facility. The district name is taken automatically from the COABDIS table.
Address	Street address where facility is located.
City	City where facility is located.
Zip	Facility Zip code.
Zip Ext.	Facility Zip code extension.
Area Code	Facility telephone area code.

Toxic Program Status	Fee category – this field indicates which category a facility is under. Click on the down arrow to see a list of toxic program status for the facility.
Year of Emission Data	Year in which emissions were estimated.
Year of Risk Data	Year in which risk data were estimated.
Updating Code	Code indicating HARP emissions were updated. Click on the down arrow to see a list of updating codes.
CERR	Consolidated Emissions Reporting Rule. Code indicating which type of the CERR program a facility is classified.
Forecasting	This field is used to indicate whether a facility is used for forecasting purposes. A value of N indicates that this is an NSR facility. Press the button labeled Forecasting to change the value of this field.
CHAPIS	A check in this field indicates the facility is a CHAPIS facility.
Small Commercial	A check in this field indicates the facility is a small commercial facility.
Maintained by Districts	A check in this field indicates the facility is agreed to be maintained by districts.
Location only	A check in this field indicates this facility only update its location only.
SIC	Source Industrial Code. This is the main activity of the facility.
NAICS	North American Industrial Classification Code. This code will eventually replace the SIC.
Location – East	X_USERCOORD: East to West coordinate provided by the facility.
Location – North	Y_USERCOORD: North to South coordinate provided by the facility.
Coord_system	Coordinate system used. The coordinate system should be specified to define coordinates.
Datum	Datum used. The datum should be specified to define coordinates.
Spheroid	Shape used for ellipsoidal earth. The spheroid should be specified to define coordinates.
Person	Name of the phone contact person for each facility.
Area Code	Three-digit area code phone number.
Phone	Seven-digit facility phone number.
# Employees	Number of employees at the facility.
AIRS AQCR	Air Quality Control Region
Co. Name	Company name. This can be either the parent company of the facility or the facility itself.
Address (Mailing)	Street-mailing address of a facility. If the mailing address is the same as the facility address, it can be copied from the facility address on the

	facility-editing window by pressing the button labeled <i>Copy Facility Address</i> .
City (Mailing)	City where facility is located for mailing purposes. If the mailing address is the same as the facility address, it can be copied from the facility address on the facility-editing window by pressing the button labeled <i>Copy Facility Address</i> .
Attention	Facility contact person for mailing purposes. If the mailing address is the same as the facility address, it can be copied from the facility address on the facility-editing window by pressing the button labeled <i>Copy Facility Address</i> .
FRS_ID	Facility Registry System ID. This field is uniquely assigned by the federal EPA for each facility and is used across different media such as municipal waste and water pollution.
Special Project ID	GEOID for ARB used only.
SO2 Designation	Area designation for SO2. Allowable values are: A (attainment), N (non-attainment), T (non-attainment, transitional), U (unclassified). Press the button labeled <i>SO2 Designation</i> to select an allowable value from a list.
PM Designation	Area designation for particulates. Allowable values are: A (attainment), N (non-attainment), T (non-attainment, transitional), U (unclassified). Press the button labeled <i>PM Designation</i> to select an allowable value from a list.
OZ Designation	Area designation for Ozone. Allowable values are: A (attainment), N (non-attainment), T (non-attainment, transitional), U (unclassified). Press the button labeled <i>OZ Designation</i> to select an allowable value from a list.
NO2 Designation	Area designation for NO2. Allowable values are: A (attainment), N (non-attainment), T (non-attainment, transitional), U (unclassified). Press the button labeled <i>NO2 Designation</i> to select an allowable value from a list.
CO Designation	Area designation for CO. Allowable values are: A (attainment), N (non-attainment), T (non-attainment, transitional), U (unclassified). Press the button labeled <i>CO Designation</i> to select an allowable value from a list.
Subco. ID	Facility sub-county identifier. If this is entered, it must correspond to one of the subcounty codes in the SUBCO table. You may select a value from a list by pressing the button labeled <i>Subco. ID</i> .
Rec. Proximity	This is the distance from the facility to the nearest receptor for the purpose of calculating facility priority score. You may enter a value directly into the box of the facility-editing window or press the button labeled <i>Rec. Proximity</i> to have HARP calculate it. Calculation of

	receptor proximity requires that you have already entered facility stack data and property boundary data.
Priority Multiplier	A factor that is used to adjust the prioritization score at a facility. This could be used to increase a facility score if a facility, for example, emits multipathway pollutants or has receptors that are closer than 50 meters.
District FACD1	Reserved for district use.
District FACD2	Reserved for district use.
Toxic Program Phase	Phase at which a facility was brought into HARP. Must be one of the following: P1 (first phase, >=25 TPY), P2 (second phase, >= 10 TPY and <25 TPY; P3 (third phase, <10 TPY). Click the down arrow to view and then choose the correct toxic program phase for the facility.
Industry Wide	This field indicates whether a facility is included in the industry-wide emissions data. Allowable values are: Y (included in industry-wide) and N (not included in industry wide).
Priority for Risk	This field indicates the priority of a facility for risk assessment. Allowable values are: H (high priority), L (low priority) or I (intermediate priority). Press the button labeled Priority for Risk to change the value of this field.
Exemption Status	Reason for facility to be exempted from the Air Toxics Hot Spots program.
Small Business	Indicates whether facility is a small business.
Year of Prioritization	Indicates the reporting year when the prioritization score was estimated.
Number of SCC used	Indicates the number of SCC used at the facility. This field is used to classify a facility for fee purpose.
HRA Cancer	Health Risk Assessment, cancer potency number calculated for the facility.
Chronic HI	Chronic hazardous index (HRA) score calculated for the facility.
Acute HI	Acute hazardous index (HRA) score calculated for the facility.
Last Update	The data when this record was last modified. For facility records, this field is updated whenever any subordinate record is updated. Subordinate records are devices, processes, emissions or stacks that belong to the facility.

5.9 Adding a New Facility

To add a new facility to the database, select **Add** from the menu. The following dialog box will appear.

In order to add a facility record you must provide values for each of the fields shown in this dialog box. The Facility ID, County, Air Basin and District are all key fields, which must comprise a unique combination within the database. The Facility SIC is the SIC code associated with this facility and is also a required field, though it is not part of the key.

The Facility ID may be any nine-digit positive integer number that uniquely identifies this facility within the selected COABDIS (County, Air Basin, District).

The button labeled **Facility SIC** can be used to select from a list of all of the allowable facility SIC codes.

The button labeled **List COABDIS** can be used to display a list of allowable County, Air Basin, District code combinations.

When you have entered values for all fields in this dialog window, press **OK**. HARP will then validate your entries. Note: you can only exit this dialog window by providing valid entries for all fields or by pressing the **Cancel** button. If you press **Cancel**, no facility record will be added and you will return to the facility-editing window.

If all values are valid, the following facility window will appear. Note that the facility data window has been completed with fictitious data in this guide. This facility window consists of five pages. When a facility is added or edited, you will always see the first page with general information of a facility. You should go over every page on the facility window and fill in the requested information. Refer to section 5.8 for descriptions of fields on this window.

On page 1 of the facility window, under the “Fees and reporting” section, enter a “toxic program status” for this facility. Click on the down arrow button and select an appropriate fee category. Similarly, pressing the down arrow button on the “updating code” for the facility will help determine when the facility last updated their data.

If data was provided to update CHAPIS information, select CHS – CHAPIS update. If you are submitting location data only such as facility name and address for this facility, check the “location” box. Examples of this facility type include metal platers and dry cleaners.

Select an appropriate Consolidated Emission Reporting Rule (CERR) and report it in the CERR box. If a facility is classified as a type A facility, stack ID are required for all release points. For type B facility, stack coordinates and parameters such as stack high and stack flow rate are required. Please refer to <http://www.epa.gov/ttn/chief/cerr/cerr.pdf> for a better description of the CERR requirements.

If you do not know the SIC or NAICS codes, click on the field button and a drop down window will appear listing available SIC or NAICS codes. Type a word or a partial word and then click ***Search for string***, the search is narrowed down so you can choose an appropriate SIC. Once a SIC is chosen, highlight the row and click OK. The chosen SIC is then transferred to the SIC input area. ***SIC is a “Not Null” required field. You should enter an SIC for the facility to be saved in the database.***

The coordinates that are entered for the location of the facilities and the stacks may be expressed in any of four coordinate systems. The coordinate system that you have chosen is shown in the grayed out boxes on the lower right portion of the window, as illustrated below. You may

change your preference for the coordinate system or convert from one coordinate system to another by clicking the button labeled “Change Coordinate System”. For information on changing coordinate systems, see section 5.9.1.

Page 2 is self explanatory, except for the EPA Facility Registry System ID. This field is a unique ID across different media such as air and waste and is assigned by the U.S. Environmental Protection Agency. If your facility is new and has never been inventoried, we’ll request an ID for you.

On page 3, the status designation for each criteria pollutant is by the county level. If your facility is within an attainment area for any of the pollutants, designate it as indicated.

Page 4 and 5 are self-explanatory.

5.9.1 Facility and Stack Coordinate Conversions

When you click the “Change Coordinate System” button, the window shown below will appear.

	NAD 27	NAD 83	WGS 84
UTM			
UTM East (km)	474	473.920446972741	473.920446972615
UTM North (km)	3634	3634.19730149163	3634.19730149777
Zone	11	11	11
GEODETIC			
Longitude (degrees)	-117.277832711128	-117.278691941448	-117.278691941448
Latitude (degrees)	32.8454742488641	32.8455327357209	32.8455327348607
Teale-Albers			
East (m)	255131.742410988	255045.497131159	255045.497132669
North (m)	-570644.585380742	-570473.280336032	-570473.280341102

To specify that the coordinates you have entered be expressed in a different system, click the appropriate radio buttons in the boxes labeled “Coordinate System” and “Datum”, and then click **Accept** on the menu. This will not change the values that you have entered; it will only change how the program interprets them. You may also edit the coordinate values themselves on this window, or you may edit them on the facility window after this window is closed.

For example, if you know that the geodetic coordinates in the NAD83 datum are 33 degrees north latitude and 117 degrees east longitude, then click the Geodetic button and the NAD83 button, and enter the values of 33 for North and –117 for East. Then press **Accept**. Note that negative values for the east coordinate are required for east longitude (i.e. all longitudes in the United States have negative values).

Now suppose that you want to convert the coordinates shown in the figure above from UTM, ZONE 11, NAD27 to geodetic. First, if you have made any changes to the “User Input Coordinates” or the coordinate system and datum options since you first opened this window, then you must click the button labeled “Update”. This updates the values of the “Other Coordinate Systems” shown on the bottom portion of the window. Then click any one of the four “Copy” buttons to copy the “other coordinates” to the “user coordinates”. In this example, you would click the copy button next to geodetic NAD83. Then click the **Accept** button.

5.10 Stack Data Window

A stack is where the emissions are released into the atmosphere. Stack is also defined as an emission release point; therefore, every process must have an associated stack, whether it is a point, area or volume source, or an open pit. ***You need to assign a stack ID and associate it with every process within your plant.*** Depending on the stack type, associated stack parameters should be provided.

Before you can edit stack data you must first choose a facility by selecting **Edit Data/Facilities and Emissions** from the main menu. For information on editing facility data refer to section 5.9.

The stack data window is used to edit data contained in the stack table. To edit stack data select **Stack** from the facility data window. If there is no stack data in the database for the currently selected facility, HARP will display a warning message and the stack window will be blank.

The stack data window appears as shown below. The following sections describe the data fields. Refer to section 5.7.2 for descriptions of the menu options.

5.10.1 Stack Data Field Descriptions

When you add a new stack or edit an existing stack record, the names and IDs of the facility, county, air basin and district are automatically set to the same values as the facility that contains that stack. The following is a description of the other data fields in the stack-editing window.

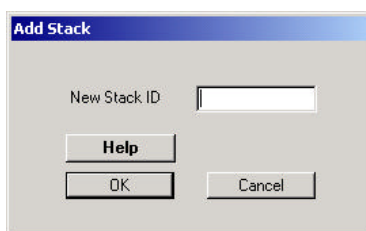
Certain parameters listed below are specific to the type of release point. For example, temperature and velocity only apply to point sources. Only the input variables that apply to the selected release type are shown on the window.

Stack Name	The descriptive name of a stack. This may be any string up to 60 characters.
Elevation	Elevation of the base of a stack in feet – distance above sea level.
Release Height	Stack height in feet, from the base of the stack.
Stack Diam	Stack diameter at exit in feet.
Temperature	Actual gas temperature as exit in degrees F. Must be a number between 50 and 2,500.
Rate	Actual gas flow rate in cubic feet per minute (CFM).
Calculate Rate (button)	When you press this button, HARP calculates and displays the gas flow rate from the velocity and stack diameter.

Calculate Velocity (button)	When you press this button, HARP calculates and displays the gas exit velocity from the flow rate and stack diameter.
Velocity	Actual gas velocity at exit in ft/min.
East	East to West coordinate of the stack.
North	North to South coordinate of the stack
Release Type	Type of release: point, volume, area, or open pit.
Width of vol. Source (Lateral Dimension)	Corresponds to the parameter SYINIT for a volume source. Refer to the ISC documentation, Volume II.5, Table 1-6. Note: In HARP, the user must divide the width of the volume source by the appropriate factor (e.g., 4.3), and then enter the quotient into HARP.
Height of vol/area source (Vertical Dimension)	Corresponds to the parameter SZINIT for an area source. Refer to the ISC documentation, Volume II.5, Table 1-6. Note: In HARP, the user must divide the height of the source by the appropriate factor (e.g., 2.15), and then enter the quotient into HARP.
X width of area/pit source	Corresponds to the parameter XINIT for an area or open pit source. Refer to the ISC documentation.
Y width of area/pit source	Corresponds to the parameter YINIT for an area or open pit source. Refer to the ISC documentation.
Angle of area/pit source	Corresponds to the parameter ANGLE for an area or open pit source. Refer to the ISC documentation.
Volume of open pit	Volume of an open pit source. Refer to the ISC documentation.
IsDefault	Are any values in the stack data defaulted?
Last Update	Date any stack data are updated.

5.10.2 Adding a New Stack Record

To add a new stack to the database, select **Add** from the menu of the stack data window. The following dialog box will appear.



In order to add a stack record you must provide a new stack ID. The stack ID must be a positive integer number, up-to-six digits that is unique for the current facility. When you have entered the new device ID, press **OK**. HARP will then validate your entry. You can only exit this dialog window by providing a valid stack ID or by pressing the **Cancel** button. If you press

Cancel then no stack record will be added and you will return to the facility data window. Let's suppose you have provided a valid stack ID for the current facility. A stack data window appears as follow:

Stack Data - Inventory Year 2002

Add Duplicate Delete Save List Undo Next Previous Goto Help Exit

STACK INFORMATION

Page 1 Page 2

Identification (1)

Name: ABC CHEMICAL ID: 3002

Facility: Stack Name: STACK NUMBER 1

Stack Name: 1

Release Parameters

Elevation (ft): 264 Temp (F): 300

Release Ht. (ft): 51 Rate (acfm): 754 Calculate Rate

Stack Diam. (ft): 4 Vel. (fpm): 60 Calculate Vel.

Location

East: 475 Datum: NAD27 Change coordinate system

North: 3633.325 Coord. System: UTM

Units: km Zone: 11

Spheroid: CLARKE1866 Locating Method: 013

Release Type

Release Type: ☒ Point ☐ Volume ☐ Area ☐ Open Pit

Is default: A

The stack data window will always default to a point source release. If the stack diameter and velocity of the exit gas are provided, pressing the **Calculate Rate** button will automatically fill in the rate. If the stack diameter and the rate are provided, pressing the **Calculate Velocity** button will automatically fill in the exit gas velocity.

Similar to the facility data window, the coordinates that are entered for the location of the stacks may be expressed in any of four coordinate systems. The coordinate system that you have chosen is shown in the grayed out boxes on the lower right portion of the window. On the stack window there is a button that allows you to convert the stack location from one coordinate system to another. This button functions exactly the same way as the corresponding button on the Facility window. For a description of this function, refer to section 5.9.1.

Note: *Every stack should be identified with a set of coordinates regardless of the release type.*

Depending on the type of release (whether it is a point, volume, area source, or an open pit) certain parameters should be provided. Refer to section 5.10.1 for descriptions of fields to be entered. Select the volume and the HARP screen will be updated to reveal appropriate stack data fields. Enter stack data for a volume source. Select area if the release point is an area

source, such as a pond, and enter the appropriate data. Select open pit if the release point is an open pit. Enter appropriate data for this open pit.

On page 2, address any comments regarding the stack entered in the memo field.

5.11 Device Data Window

A device is a piece of equipment used in any process. For example, a boiler used in a distillate oil combustion process or a paint booth used in a painting process. A facility can have many devices, each identified by a positive integer, up to six digits. A device can have up to 99 processes, each identified by a process ID – PROID. For example, a boiler can burn distillate oil at one time and residual oil at another time. Therefore, one process can be classified as a distillate oil combustion process while another is a residual oil combustion process.

Before you can edit device data you must first select a facility by selecting **Edit Data/Facilities and Emissions** from the main menu. For information on editing facility data refer to section 5.9.

The device data window is used to edit data contained in the device table. To edit device data select **Device** from the facility data window. If there is no device data in the database for the currently selected facility and reporting year, HARP will display a warning message and the device window will be blank. You must add a device record to a facility before you can enter any process or emissions data for that facility. To add a device, refer to section 5.11.2.

The device data window appears as shown below. The following sections describe the data fields. Refer to section 5.11.1 for descriptions of the menu options.

Device Data - Inventory Year 2002			
Add Duplicate Delete Save List Undo Next Previous Goto Process Help Exit			
Location			
Name:		ID:	
Facility	ABC CHEMICAL	FACID	3002
County	SAN DIEGO	CO	37
Air Basin	SAN DIEGO	AB	SD
District	SAN DIEGO COUNTY APCD	DIS	SD
Device	DEVICE1	DEV	1
Last Update		9/23/2003 4:57:41 PM	
Device			
Permit ID:	EQ123456789	Sub county ID	
No. Devices	1	DEVD1	
Section	3	DEVD2	
TownShip	5	Equipment Size	
Township Base	N		
Range	5		
Range Base	E	Eq. Size Confid.	N
		Output capacity (MW)	
Memo THIS IS A TEST DEVICE			

DEVICE WINDOW

5.11.1 Device Data Field Descriptions

When you add a new device or edit an existing device record, the names and IDs of the facility, county, air basin and district are automatically set to the same values as the facility that contains that device. The following is a description of the other data fields on the device-editing window.

Device Name	The descriptive name of a device. The name can be any alphanumeric string up to 40 characters long.
Device ID	A positive integer ID (up-to-six digits) which uniquely identifies each device within a particular facility and COABDIS. A device ID must be specified at the time a device is added to the database. After that it cannot be changed.
Permit ID	Local permit ID.
No. Devices	Number of devices represented by this record. If there are exactly the same types of devices at the facility, write the number of devices here and aggregate processes and emissions for these devices.
Section	Section location of this device. Must be an integer number from 1 to 36.
Township	Township location of this device. Must be an integer number from 1 to 50
Township Base	Township base. Must be one of the following values: N (north), S (south). Press the button labeled <i>Township Base</i> to change the value of this field.
Range	Range location of this device. Must be an integer number from 1 to 50
Range Base	Range location base for this device. Must be one of the following values: E (east), W (west).
Subcounty ID	Device subcounty identifier. If this is entered, it must correspond to one of the subcounty codes in the SUBCO table. You may select a value from a list by pressing the button labeled <i>Subcounty ID</i> .
DEVD1	An alphanumeric field of up to forty characters, reserved for district use.
DEVD2	An alphanumeric field of up to forty characters, reserved for district use.
Equipment Size	A numerical value of the equipment size ranging from 0 to 999999.9. The units of measurement depend on the value of Equip. Size Units.
Equip. Size Units	Equipment size units code. This is an integer number that must be taken from the EQSIZEUNIT table. This field is to be used in the future. It is recommended that this field be left blank for the time being.
Equipment Type	Equipment type code. This is an integer number that must be taken from the EQTYPE table. This field is to be used in the future. It is recommended that this field be left blank for the time being.
Eq. Size Confid.	Equipment size confidential flag. Allowable values for this field are: Y (equipment size is confidential), N (equipment size is not confidential).

Output Capacity Device output capacity in megawatts. Any number up to 9999.99 is valid. This field is designed to store a device output capacity at any power plant.

5.11.2 Adding a New Device

To add a new device to the database, select **Add** from the menu of the device data window. The following dialog box will appear.



In order to add a device record you must provide a new device ID. The device ID must be a positive integer, up-to-six digits that is unique for the current facility.

When you have entered the new device ID, press **OK**. HARP will then validate your entry. You can only exit this dialog window by providing a valid device ID or by pressing the **Cancel** button. If you press **Cancel**, no device record will be added and you will return to the device data window. Information on the device data window is self-explanatory. Please refer to section 5.11.1 for device data field descriptions.

To enter process information, select **Process** from the device data window. Refer to the next section for the process data window.

5.12 Process Data Window

A process can be defined as an activity at the device or equipment. For example, an activity can be an incineration, soldering, painting, or plating process. HARP identifies processes using PROID. As mentioned in section 5.11, a device can have as many as 99 processes, each identified by a PROID. This section describes the process data window in detail.

Before you can edit process data you must first choose a facility by selecting **Edit Data/Facilities and Emissions** from the main menu. You must then choose a device by selecting **Device** from the facility data window. For information on editing facility data refer to section 5.9. For information on editing device data refer to section 5.11.

The process data window is used to edit data contained in the process table. To edit process data, select **Process** from the device data window. If there is no process data in the database for the currently selected facility, device and reporting year, HARP will display a warning message and the process window will be blank. You must add a process record to a

facility before you can enter any emissions data for that facility. To add a process, refer to section 5.12.2.

The process data window appears as shown below. The following sections describe the data fields. Refer to section 5.7.2 for a description of the menu options.

5.12.1 Process Data Field Descriptions

When you add a new process or edit an existing process record, the names and IDs of the facility, county, air basin, district and device are automatically set to the same values as the device that contains that process. The following is a description of the other data fields on the process-editing window.

- Process Name The descriptive name of a process. The name can be any alphanumeric string up to 60 characters long.
- Process ID A positive integer ID, up to two digits, which uniquely identifies each process within a particular facility, device and COABDIS. A process ID must be specified at the time a process is added to the database. After that it cannot be changed.
- Confidential This flag field identifies whether the process is confidential. Allowable values for this field are: Y (process data is confidential), N (process data is not confidential). A “Y” on this field signifies that other related data

	such as emission factor and design rate are confidential and will not be released outside of the Air Resources Board.
Forecast	Process specific forecast indicator. Domain for this field is N for new source review (NSR) and null. An “N” indicates that the process is a NSR process related for forecasting purpose.
Stack	The ID of the stack to which this process is physically connected. The ID must correspond to one of the stacks already defined for the facility. Press the button labeled <i>Stack</i> to select from a list of valid stacks. <i>It is important that each process be associated with a stack. If you do not enter a stack ID in this field, we will assume that this is a fugitive source and will assign an associated stack ID for it.</i>
SCC Units	SCC units are automatically set when the SCC is chosen. This field is taken directly from an SCC table and the user does not need to enter it.
Process Rate	This is the process rate in SCC units. If this field is entered, along with the emission factor, annual emissions for the process will be calculated.
Max Design Rate	Maximum design rate.
Date Process Rate Last Changed	Date on which the process rate field in the database was last changed. This is automatically updated by HARP.
Changed by Agency/Person	The person who last changed the process rate in the database. This is automatically updated by HARP using the initials that you enter when you log onto the system.
Unreconciled Process Rate	Unreconciled areawide source process rate. This only applies to areawide sources.
Max. Hourly Process Rate	Maximum hourly process rate in SCC units per hour. The greatest operating rate that would be expected for the source in a one-hour period.
SIC	This is the standard industrial classification code that best describes the industrial activity at the process level. Press the button labeled SIC to select from a list of valid codes. <i>This is a “not null” (required) field in HARP and therefore must be entered by the user.</i>
SCC	This is the process source classification code (SCC) which closely corresponds to a process. Press the button labeled SCC to select from a list of valid codes. <i>This is also a “not null” (required) field in HARP and therefore must be entered by the user.</i>
EIC Code	This field is an Emission Inventory Code (EIC) for areawide sources. HARP generates this Code when a process ID is chosen. Areawide sources should already have been populated with previous emission inventory data. You cannot add an areawide source category. Contact the ARB for assistance if you need to create an EIC.
EICSUMN	This field describes the summary of the areawide source for the EIC and is computer generated.

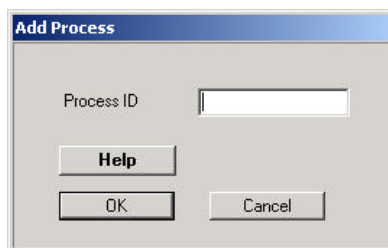
EICSOUN	This field describes the source of the areawide source for the EIC and is computer generated.
EICMATN	This field describes the material used in the EIC and is computer generated.
REIC	This is the reconciled EIC code used by the ARB to reconciled emissions between areawide and point sources. If the entered SIC/SCC combination is valid, a REIC will display. If it is not and you strongly believe it is a valid combination, the ARB will assign a valid code for it. This code is displayed from the <i>category</i> table for your information.
Process Rate Origin Code	This field is to be used in the future.
Process Rate Reliability	Process rate reliability. This must be an integer number of no more than 3 digits.
Sulfur Content	Fuel sulfur content expressed as a percentage and is only applicable to liquid fuel such as distillate or residual oils. This field must be between 0.0 and 3.0.
Spatial Distribution Parameter	This field is numerical spatial distribution parameter and is applied only to areawide sources.
PROD1	This is an alphanumeric field of up-to-forty characters reserved for district use.
PROD2	This is an alphanumeric field of up-to-forty characters reserved for district use.
Operating Hrs/Day	Code used to specify number of operating hours per day. Press the button labeled <i>Operating Hrs/Day</i> to select from a list of valid codes.
Operating Days/Wk	Code used to specify number of operating days per week. Press the button labeled <i>Operating Days/Wk</i> to select from a list of valid codes.
Operating weeks per year	Number of operating weeks per year.
Agency Making Areawide Source Estimate	This is an alphanumeric field of up to six characters identified the name of the agency making the areawide source estimate and is applied to areawide sources only.
Year of Emission Estimate	Year in which the process/emission estimate was made. Must be between 1980 and the current year.

5.12.2 Adding a New Process

The procedures for adding a new process record are slightly different depending on whether you are editing stationary point data or areawide source data. If you selected *Edit Data/Facilities and Emissions* from the main menu, then you are editing stationary point data.

5.12.3 Adding a Stationary Point Process

To add a new stationary point source process to the database, select **Add** from the menu of the process data window. The following dialog box will appear.

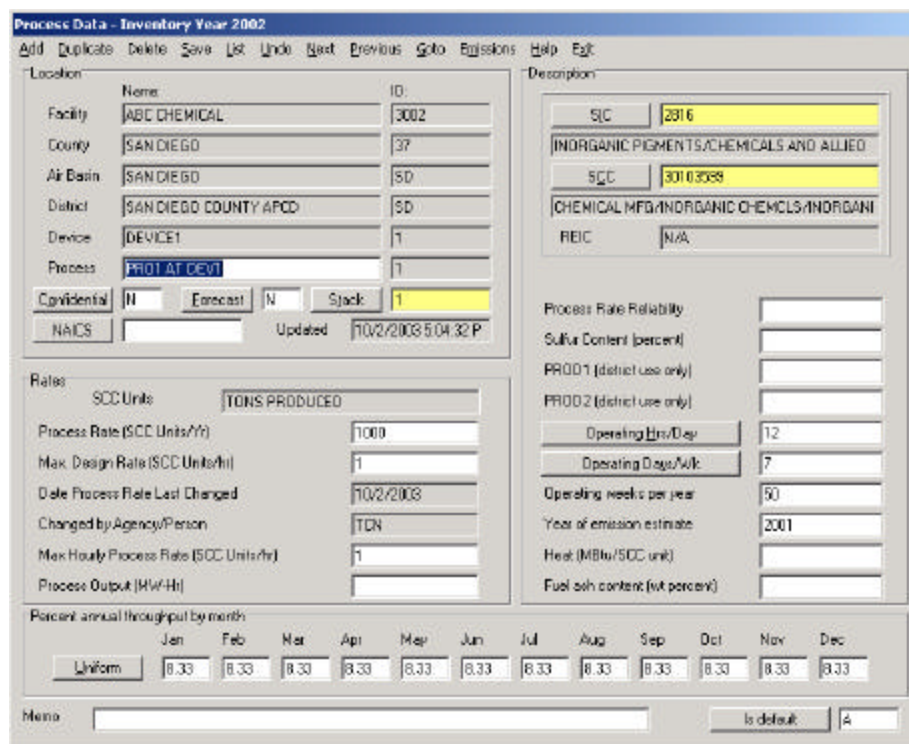


The 'Add Process' dialog box is a simple window with a title bar. It contains a text input field for 'Process ID'. Below the input field are three buttons: 'Help', 'OK', and 'Cancel'.

In order to add a process record you must provide a new process ID. The process ID must be an integer number that is unique for the current facility and device. When entering stationary point data, the process ID must be a number from 1 to 99. If you are entering areawide source data the process ID must be a valid EIC code.

When you have entered the new process ID, press **OK**. HARP will then validate your entry. You can only exit this dialog window by providing a valid process ID or by pressing the **Cancel** button. If you press **Cancel** then no process record will be added and you will return to the process data window.

An example of a completely filled in process data window is shown here:



The 'Process Data - Inventory Year 2002' window is a complex form with multiple sections. It includes a menu bar at the top with options: Add, Duplicate, Delete, Save, List, Undo, Next, Previous, Goto, Emissions, Help, Exit. The main content is divided into several panels:

- Location:** Fields for Name, ID, Facility, County, Air Basin, District, Device, Process, Confidential, Forecast, Stack, NAICS, and Updated.
- Rates:** Fields for SCC Units, TONS PRODUCED, Process Rate (SCC Units/Yr), Max. Design Rate (SCC Units/hr), Date Process Rate Last Changed, Changed by Agency/Person, Max Hourly Process Rate (SCC Units/hr), and Process Output (MWHr).
- Description:** Fields for SIC, INORGANIC PIGMENTS/CHEMICALS AND ALLIED, SCC, CHEMICAL MFG/INORGANIC CHEMICALS/INORGANIC, REIC, Process Rate Reliability, Sulfur Content (percent), PROD1 (district use only), PROD2 (district use only), Operating Hrs/Day, Operating Days/Wk, Operating weeks per year, Year of emission estimate, Heat (MBtu/SCC unit), and Fuel ash content (wt percent).
- Percent annual throughput by month:** A table with columns for months (Jan to Dec) and rows for Uniform and other throughput values.
- Menu:** A text input field and a 'Is default' checkbox.

The gray-fields are computer generated and cannot be edited here. Refer to section 5.12.1 for process data field descriptions in the process data window. ***You must enter a stack ID in the stack field to identify the emission release point. Otherwise, these emissions will be assigned as fugitive with an ARB-assigned stack ID.*** In this case, it is likely that the facility's coordinates would also be assigned for the stack location. If stack ID were created and data were entered previously, click the "stack" button to access a list of available stacks. Select an associated stack for this process and click OK. This stack ID is transferred to the stack field.

You should enter a process rate in an SCC unit if you want to calculate annual emissions using the soon-to-be supplied emission factor in the emission data window. You must enter a SIC and a valid SCC to save this process since these fields are "not null" fields. If the SIC for this process is not known, press the SIC button and the drop-down window will help you choose an appropriate SIC. In the following example, the SIC button is pressed and a process involving inorganic pigment is searched. After entering the word "inorganic" and pressing the "Search for string" button, the following window appears. Note that the computer searches SICN, SIC2N, SIC3N, and SIC4N for the word "inorganic". Therefore, all SICs containing the word "inorganic" are shown.

The screenshot shows a window titled "SIC" with a search bar containing "inorganic". Below the search bar, it says "No. records: 4". An SQL query is displayed: "select sic2n,sic3n,sic4n from SIC where (sic2n like '%inorganic%' or sic3n like '%inorganic%' or sic4n like '%inorganic%')) order by sic". Below the query is a table with four columns: SIC Name1, Name2, Name3, and Name4. The table contains four rows of results.

SIC Name1	Name2	Name3	Name4
2812 ALKALIES AND CHLORINE	CHEMICALS AND ALLIED PRODUCTS	INDUSTRIAL INORGANIC CHEMICALS	ALKALIES AND CHLORINE
2813 INDUSTRIAL GASES	CHEMICALS AND ALLIED PRODUCTS	INDUSTRIAL INORGANIC CHEMICALS	INDUSTRIAL GASES
2816 INORGANIC PIGMENTS	CHEMICALS AND ALLIED PRODUCTS	INDUSTRIAL INORGANIC CHEMICALS	INORGANIC PIGMENTS
2819 INDUSTRIAL INORGANIC CHEMICALS NEC	CHEMICALS AND ALLIED PRODUCTS	INDUSTRIAL INORGANIC CHEMICALS	OTHER INDUSTRIAL INORGANIC CHEMICALS

Similarly, you can search for any SCC code in the SCC table by pressing the SCC button and follow the on-screen instructions. If you are only entering data for risk assessments purposes, 9999 (unknown) can be added for the SIC code, and 99999999 for SCC code.

If the process operates uniformly throughout the year, click the ***Uniform*** button and the percentage for each month will automatically be filled in. Refer to section 5.12.1 for process data field descriptions.

5.13 Emissions Data Window

Before you can edit emissions data for a point source you must first choose a facility by selecting **Edit Data/Facilities and Emissions** from the main menu. You must then choose a device by selecting **Device** from the facility data window, and a process by selecting **Process** from the device data window. If you are entering data for areawide sources, you can get to the process window by selecting **Edit Data/Areawide (Regional) Sources** from the main menu.

For information on editing facility data refer to section 5.9. For information on editing device data refer to section 5.11. For information on editing process data refer to section 5.12. The emissions data window appears as follows.

Emissions Data - Inventory Year 2

Add Duplicate Delete Save List Undo Next Previous Goto Help Exit

Location

Facility	Name: ABC CHEMICAL	ID: 3002
County	SAN DIEGO	37
Air Basin	SAN DIEGO	SD
District	SAN DIEGO COUNTY APCD	SD
Device	DEVICE1	1

Process Description

Process ID	1
Process Name	PROD AT DEV1
Reconciled Area Source EIC	N/A
Process Rate	1000
Process Rate Units	TONS PRODUCED

Emissions

Last Update: []

Pollutant Name: Formaldehyde

Pollutant ID: 50000

Dis. Frac. ROG, PM10: N/A

Dis. Frac. VOC, PM2.5: N/A

Dis. Frac. PM 1.0: []

Emission Factors:

Uncontrolled EMS Fact	[]
EMS Factor	[]
EMS Fact Last Update	[]
Reason for Change	[]
Person changing	[]

Control Devices:

Primary Control	[]
Secondary Control	[]
Efficiency	[]
Forecasted	[]

EMS Fact Reliability: []

History:

Last EMS Update	[]
Person changing	[]

Emissions: ☐ Maintained by district

UnRec. EMS (area tpy)	[]
Annual EMS (lbs/yr)	1
Calculated Annual EMS	[]
Hr Max EMS (lbs/hr)	0.01
Calculated Hourly EMS	[]

Excess EMS: []

Potential: []

EMS Calc. Method: []

Memo: []

The emissions data window is used to edit data contained in the emission table. To edit emission data, select **Emissions** from the process data window. If there is no emissions data in the database for the currently selected facility, device, process and reporting year, HARP will display a warning message and the emissions window will be blank. To add an emissions record, refer to section 5.13.2.

The following sections describe the data fields. Refer to section 5.7.2 for descriptions of the menu options.

5.13.1 Emissions Data Field Descriptions

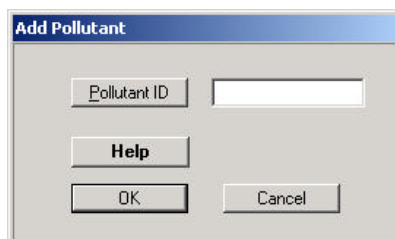
When you add a new emission record or edit an existing emission record, the names and IDs of the facility, county, air basin, district, device and process are automatically set to the same values as the process that contains those emissions. The following is a description of the other data fields on the emissions editing window.

Pollutant Name	The name of the pollutant being emitted. HARP fills this in automatically so that it corresponds to the pollutant ID on the emission-editing window.
Pollutant ID	An ID that uniquely identifies each emitted pollutant within a particular facility, device, process and COABDIS. A pollutant ID must be specified at the time an emission record is added to the database. After that it cannot be changed. The pollutant ID must correspond to one of the pollutants in the POLLUTANT table.
Cal. Frac. ROG/PM10	This is a specified ROG or PM ₁₀ fraction from the provided TOG, ROG, PM, and PM ₁₀ emissions. This field is grayed out and is for information only. If the district does not provide ROG or PM ₁₀ emissions records, HARP will automatically calculate these emissions using ARB default fractions. In this case, the “Cal. Frac. ROG/PM10” and the “Fraction ROG/PM10” will be the same.
Fraction ROG/PM10	ARB default fraction for ROG or PM ₁₀ or NO _x . HARP fills this in automatically from the fraction table.
Cal. Frac. VOC/PM 2.5	This is a specified VOC or PM _{2.5} fraction from the provided TOG, VOC, PM, or PM _{2.5} emissions. This field is grayed out and is for information only. If the district does not provide VOC or PM _{2.5} emissions records, HARP will automatically calculate these emissions using ARB default fractions. In this case, the “Cal. Frac. ROG/PM10” and the “Fraction ROG/PM10” will be the same.
Fraction VOC/PM 2.5	ARB default fraction of VOC or PM _{2.5} . This number is for information only.
Primary Control	Primary pollutant control device code. This must be a number taken from the CNTLDEV table. Press the button labeled Primary Control to select from a list of valid codes.
Secondary Control	Secondary pollutant control device code. This must be a number taken from the CNTLDEV table. Press the button labeled Primary Control to select from a list of valid codes.
Efficiency	Control efficiency expressed as a percentage. This field must be a number between 0.0 and 100.0.
Forecasted	Pollutant specific forecast indicator. This may be left blank or set to R to indicate that this is a South Coast AQMD “reclaim” pollutant. Press the button labeled Forecast to change the value of this field.

UnRec. EMS	This field is for unreconciled areawide emissions and is applied to areawide sources only. If the unreconciled process rate was revised, you should also revise this field.
Uncontrolled EMS Factor	This is an uncontrolled emission factor. The unit for this field is either lb per SCC unit or any appropriate units used in the reported emissions.
EMS Factor	This is the actual emission factor and is used to calculate annual emissions.
Annual EMS	This is the reported annual emissions for each entered pollutant. Units are tons/year for criteria pollutants, lbs/year for toxics, and curies/year for radionuclides.
Calculated Annual EMS	HARP calculates and displays this field for your reference and validation. They are calculated using the process rate and the emission factor data provided.
Hr. Max. EMS	Hourly maximum emissions. Units are lbs/hour, except for radionuclides which are in millicuries/hour.
Calculated Hourly EMS	The hourly maximum emissions are calculated by HARP and displayed for your reference and validation. They are calculated from the maximum hourly process rate and emission factor.
Excess EMS	Total excess emissions. Units are tons/yr for criteria pollutants, lbs/yr for toxics, and curies/yr for radionuclides.
Potential	Potential emissions for districts' use. Units are tons/yr for criteria pollutants, lbs/yr for toxics, and curies/yr for radionuclides.
EMS Calc. Method	Emission calculation method code. This is an integer number that must correspond to one of the values in the DEFMETH table.
Last EMS Update	Date on which the annual emission rate was last updated in the database.
Person Changing	The person who last changed the annual emission rate in the database. This is automatically updated by HARP using the initials that you enter when you log onto the system.

5.13.2 Adding a New Point Source Emission Record

To add a new point source emissions record to the database, select **Add** from the menu of the emissions data window. The following dialog box will appear.



The dialog box is titled "Add Pollutant". It contains a text input field labeled "Pollutant ID" with a small button to its left. Below the input field is a "Help" button. At the bottom of the dialog are two buttons: "OK" and "Cancel".

In order to add an emissions record you must provide a new pollutant ID. Pollutant IDs are either the same as the CAS numbers or SAROAD codes. If you do not know the pollutant ID, press the **Pollutant ID** button to select one from a list. **Reminder: Not all of the substances in the database have health values (cancer, chronic, acute). Therefore if you plan on performing a risk analysis, make sure you have chosen the substance with the correct health value. Pollutant IDs are unique to each substance, except for carbon monoxide which is listed as 42101 (SAROAD for criteria pollutant) and 630080 (CAS number for toxics). You should always select 42101 when entering emissions for carbon monoxide unless you want to perform risk analysis for a facility using carbon monoxide. In this case select 630080 as carbon monoxide.** In addition, HARP also contains all health factors listed in the OEHHA Guidance Manual (even if the substance is not listed in the EICG document). These substances can be added by typing the substance name directly into the Add Chemicals window.

When you have entered the new pollutant ID, press **OK**. HARP will then validate your entry. You can only exit this dialog window by providing a valid pollutant ID or by pressing the **Cancel** button.

As an example, the following is a complete emission data window for a point source. Refer to section 5.13.1 for emission data field descriptions. Since particulate matter categories (PM, PM₁₀, or PM_{2.5}) are unique, we chose PM₁₀ in this example for reference.

Emissions Data - Inventory Year 2002									
Add Duplicate Delete Save List Undo Next Previous Goto Help Exit									
Location					Process Description				
Facility	Name:	ID:			Process ID				
County	ABC CHEMICAL	3002			Process Name	PRO1 AT DEV1			
Air Basin	SAN DIEGO	37			Reconciled Area Source EIC	N/A			
District	SAN DIEGO COUNTY APCD	SD			Process Rate	1000			
Device	SAN DIEGO COUNTY APCD	SD			Process Rate Units	TONS PRODUCED			
Emissions									
Last Update					12/15/2003 9:19:49 AM				
Pollutant Name					Particulate Matter 10 Microns or less				
Pollutant ID					85101				
Calc. Frac. ROG, PM10					0.9				
Fraction ROG, PM10					0.9				
Calc. Frac. VOC, PM 2.5					0.89				
Fraction VOC, PM2.5					0.89				
Dis. Frac. PM 1.0									
Control Devices:					<input type="checkbox"/> Maintained by district UnRec. EMS (area tpy) <input type="text"/>				
Primary Control					Annual EMS (lbs/yr) <input type="text"/> 0.135 Calculated Annual EMS <input type="text"/>				
Secondary Control					Hr Max EMS (lbs/hr) <input type="text"/> 0 Calculated Hourly EMS <input type="text"/>				
Efficiency					<input type="checkbox"/> Compute emissions from PM or Organic Fractions <input type="button" value="Compute from PM"/> <input type="button" value="Compute from PM2.5"/>				
Forecasted					Estimation status (CR_FLAG) <input type="text"/> 1 - calculation from PM, TOG				
Memo					Excess EMS <input type="text"/> Potential <input type="text"/> EMS Calc. Method <input type="text"/>				

If we assume primary control, secondary control, and other data have been entered; the user still needs to report annual emissions for this pollutant. If you enter annual PM₁₀ emissions, the “Cal. Fraction ROG, PM10” and “Fraction ROG, PM10” will be filled in. If you do not have emissions data for PM₁₀, you can calculate it using the reported PM emissions and the ARB default fraction. In this case, click the “Calculate from PM” and the PM₁₀ will be calculated. Please also note the “Cal. Fraction ROG, PM10” and “Fraction ROG, PM10” are filled and they are the same.

5.14 Supplemental Process Data Window

The supplemental process data window is used to enter supplemental process parameters to describe substances used, produced or otherwise present. This applies to substances that are emitted in quantities below the applicable degree of accuracy for the facility or other substances that are required to be reported (but not quantified) by the Emissions Inventory Criteria and Guidelines Regulation (Title 17 CCR, section 93300.5). The supplemental process data window can also track facilities whose activities are small enough that they do not result in reportable emissions.

Before you can edit supplemental process data, you must first choose a facility by selecting *Edit Data/Facilities and Emissions* from the main menu. For information on editing facility data refer to section 5.9.

The supplemental data window is used to edit data contained in the S_UP table. To edit supplemental data, select *Supplemental* from the facility data window. If there is no supplemental data in the database for the currently selected facility, HARP will display a warning message and the supplemental data window will be blank.

The next sections describe the menu options and data fields.

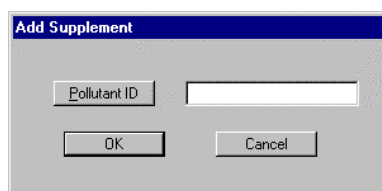
5.14.1 Supplemental Data Field Descriptions

When you add a new supplemental record or edit an existing supplemental record the names and IDs of the facility, county, air basin and district are automatically set to the same values as the facility to which this record refers. The following is a description of the other data fields on the supplemental editing window.

Pollutant Name	The name of the pollutant being emitted. HARP fills this in automatically so that it corresponds to the pollutant ID on the supplemental process data-editing window.
Pollutant ID	An ID that uniquely identifies each emitted pollutant. A pollutant ID must be specified at the time a supplement record is added to the database. The pollutant ID must correspond to one of the pollutants in the POLLUTANT table.
Abbrev. Name	The name of the pollutant being emitted. HARP fills this in automatically so that it corresponds to the pollutant ID on the supplemental process data-editing window.
Used	A flag indicating whether this substance is used. Allowable values for this field are: Y (this substance is used), N (this substance is not used). Press the button labeled Used to change the value of this field.
Produced	A flag indicating whether this substance is produced. Allowable values for this field are: Y (this substance is produced), N (this substance is not produced). Press the button labeled Produced to change the value of this field.
Present	A flag indicating whether this substance is present. Allowable values for this field are: Y (this substance is present), N (this substance is not present). Press the button labeled Present to change the value of this field.
How Present	A description of how the chemical is present at this facility. This can be any string up to 39 characters.

5.14.2 Adding a Supplemental Record

To add a new supplemental record to the database, select **Add** from the menu of the supplemental data window. The following dialog box will appear.

A screenshot of a Windows-style dialog box titled "Add Supplement". The dialog box has a blue title bar. Inside, there is a label "Pollutant ID" followed by a text input field. Below the input field are two buttons: "OK" and "Cancel".

In order to add a supplemental record you must provide a new pollutant ID. Pollutant IDs are either the CAS numbers or SAROAD codes. The pollutant ID must be a valid ID that exists in the pollutant table. If you do not know the pollutant ID, press the ***Pollutant ID*** button to select one from a list.

When you have entered the new pollutant ID, press ***OK***. HARP will then validate your entry. You can only exit this dialog window by providing a valid pollutant ID or by pressing the ***Cancel*** button.

5.15 Areawide Sources

Areawide source data is edited by selecting ***Edit Data/Areawide (Regional) Sources*** from the main menu. When you do this, HARP will take you directly to the process data window.

Internally, all process and emissions records for areawide sources are associated with a specific COABDIS (County, Air Basin, District), a fictitious facility, whose ID is 0, and a fictitious device, whose ID is also 0. The process ID for an areawide source must always be a valid EIC code from the EIC table. In all other respects, editing of areawide sources is the same as editing stationary point sources.

Note: Areawide sources should already have been populated with previous emission inventory data. You cannot add an areawide source category. Contact the ARB for assistance if you need to create an EIC.

5.15.1 Editing an Areawide Source Process

As mentioned previously, emission inventory codes (EICs) are pre-assigned by the ARB. Process and emissions data can only be changed or updated and not added. If you need to create or add an EIC, consult the ARB for assistance. To edit an existing EIC, select ***Edit Data/Areawide (Regional) Sources*** from the main menu. Click ***List*** and select a process ID for edit. An example of a process data window for areawide source is shown below.

Area Source Process Data - Inventory Year 2002

Add Duplicate Delete Save List Undo Next Previous Goto Emissions Exit

Location Updated: 10/3/2003 1:27:40

Name: ID:

Facility: AREA SOURCE 0

County: SAN DIEGO 37

Air Basin: SAN DIEGO 60

District: SAN DIEGO COUNTY APCD 50

Device: AREA SOURCE 0

Process: LIVESTOCK WASTES 620619025000

EIC Code: 62061802520000

EICSUMN: FARMING OPERATIONS

EICHATN: AGRICULTURAL WASTE

EICSUBN: SUB CATEGORY UNSPECIFIED

EICSUN: LIVESTOCK WASTES

REIC: N/A

Process Rate Reliability:

Sulfur Content (percent):

Spatial Distribution Parameter:

PRDD1 (district use only):

PRDD2 (district use only):

Operating Hrs/Day: 24

Operating Days/Week: 7

Operating weeks per year: 52

Agency making area estimate: SDG 96

Year of emissions estimate: 2001

TONS PRODUCED

Date Process Rate Last Changed: 10/3/03

Changed by Agency/Person: TON

Unreconciled Process Rate: 10000

% Annual Throughput by Month:

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Uniform	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3	8.3

Change the *Unreconciled Process Rate* and any temporal parameters such as *Operating Hour per Day* and *Operating Days per Week*. ***Be sure to specify the agency making the estimate.*** This information is needed to track any changes in the emissions for a specific EIC. Refer to section 5.13 to edit the emissions data.

5.15.2 Editing an Areawide Source Record

From the Area Source Process Data window and after entering appropriate process data, click the ***Emissions*** option in the Windows menu to access the emission data window. An example of the areawide source emission data is shown below:

Area Source Emissions Data - Inventory Year 2002			
Add Duplicate Delete Save List Undo Next Previous Goto Help Exit			
Location:		Name:	ID:
Facility	AREA SOURCE	0	
County	SAN DIEGO	37	
Air Basin	SAN DIEGO	SD	
District	SAN DIEGO COUNTY APCD	SD	
Device	AREA SOURCE	0	
Last Update	11/5/2003 11:34:50 AM		
		Process ID (EIC)	62061802620000
		Process Name	
		EICSUMN	FARMING OPERATIONS
		EICMATN	AGRICULTURAL WASTE
		EICSUBN	SUB-CATEGORY UNSPECIFIED
		EICSOUN	LIVESTOCK WASTES
		REIC	N/A
		Process Rate	0
		Units	TONS PRODUCED
Pollutant:		Emissions:	
Pollutant Name	Particulate Matter		UnRec. EMS (tons/yr)
Pollutant ID	11101		100
		Emission Factors:	History
Dis. Frac. ROG/PM10		Uncontrolled EMS Fact	EMS Calc. Method
Fraction ROG/PM10	N/A	EMS Factor	Last EMS Update
Dis. Frac. VOC/PM 2.5		EMS Fact Last Update	Person changing
Fraction VOC/PM 2.5	N/A	Reason for Change	
		Person changing	
		EMS Fact Reliability	

Note that only unreconciled emissions are needed. The ARB will reconcile emissions from this areawide source against its corresponding stationary point sources category. Once the data is entered, click save and exit.

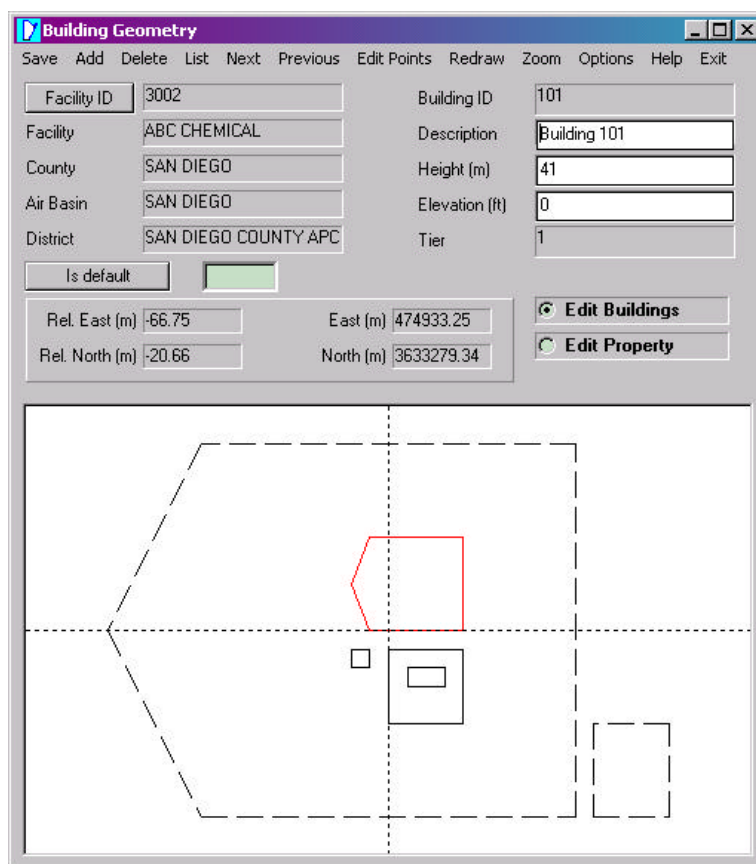
5.16 Building Geometry Data Window

Building geometry is used for building downwash calculations when setting up a dispersion analysis. If you do not enter building geometry, then no downwash calculations will be included.

Each facility may have one or more buildings. Each building may have one or more tiers. The use of tiers allows buildings to be described as multiple levels. Typically one tier will be stacked atop another to describe a stepped-in geometry.

Each tier of each building is described by three or more vertex points, which represent the corners of the building, and a tier height. The tier height is measured from the building base elevation, which is the same for all tiers of a particular building.

To edit building data for a facility, select **Geometry/Building** from the menu on the *Facility Data* window. The *Building Geometry* window will appear similar to that shown below. Each solid shape on the drawing represents a single tier of one of the buildings. Use the navigation options on the menu to select the current building tier to be edited. To add a building to this facility, select *Add*. To delete the currently selected building, select *Delete*.



To edit the individual points of the current building, select *Edit Points*. This will display the *Building Boundary Points* window as shown below. From this window you can add or delete vertex points for a tier or change the coordinates of the points.

For a detailed example of editing building geometry, refer to the tutorial in section 4.4.6.

5.17 Property Boundary Data Window

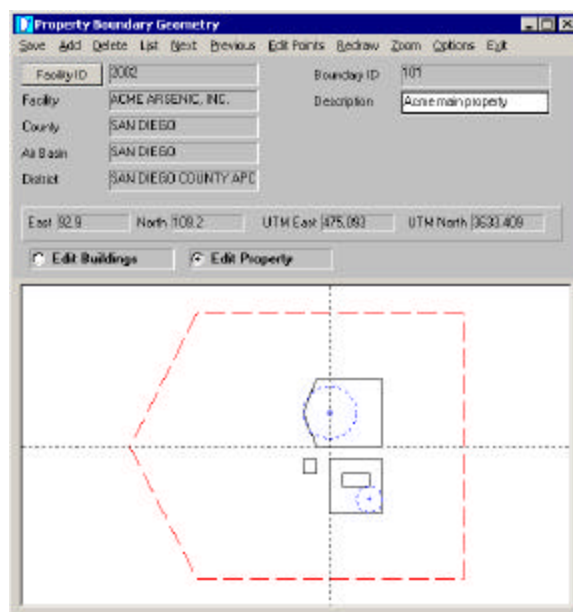
Property boundary data is used to locate boundary receptors for risk analysis. Because the MEI (maximum exposed individual) is often located on or near a property boundary, the normal practice is to place receptors along the property boundary at intervals. This must be done prior to running the dispersion analysis. Once the property boundaries have been identified HARP can be used to generate receptors at regular intervals along the boundary automatically so that you do not have to figure out the UTM coordinates of each boundary receptor.

Each facility may have one or more property boundaries. The boundary curves do not have to be connected. This could be used, for example, to describe a facility having properties on opposite sides of a street.

Each property boundary curve is described by three or more vertex points, which represent the corners of the property line.

Each vertex is described by its easterly and northerly coordinates, measured relative to the facility location. The facility location for ABC Chemical is UTM coordinates 475 meters east and 3633000 meters north as entered on the *Facility Data* window. After entering the building and property boundary coordinates, you may shift the location of all buildings and property points by adjusting the facility location only.

To edit property boundary data for a facility, select *Geometry/Property Boundaries* from the menu on the *Facility Data* window. The *Property Boundary Geometry* window will appear similar to that shown below. Each dotted line closed shape on the drawing represents a single property boundary line for this facility. Use the navigation options on the menu to select the current building tier to be edited. To add a building to this facility, select *Add*. To delete the currently selected building, select *Delete*.



To edit the individual points of the current property boundary, select *Edit Points*. This will display the *Property Boundary Points* window as shown below. From this window you can add or delete vertex points for a property boundary or change the coordinates of the points.

For a detailed example of editing property boundary geometry, refer to the tutorial in section 4.4.7.

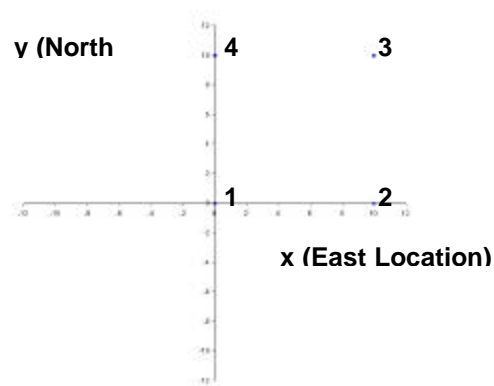
Property Boundary Points

Add Delete Sort Redraw Exit

Property Boundary 101

Plot Order	East Location (m)	North Location (m)	Elevation (ft)
1	-100	-100	0
2	100	-100	0
3	100	100	0
4	-100	100	0
5	-150	0	0

Illustration of Property Boundary Points

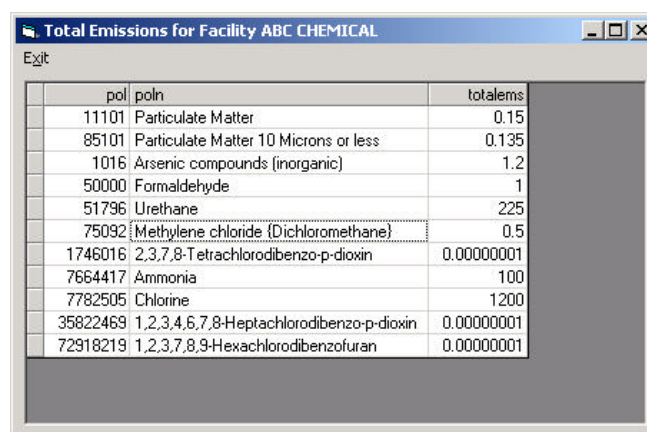


5.18 Calculate Facility Priority

HARP performs the prioritization calculations in accordance with the guidelines set forth by the California Air Pollution Control Officers Association in the document entitled *CAPCOA Air Toxics “Hot Spots” Program Facility Prioritization Guidelines (July 1990)*. This software application is intended for District use. For details on prioritization calculations please see Chapter 8.

5.19 Calculate Facility Total Emissions

From the facility-editing window you can display a summary of total facility emissions by selecting the **Calculate/Total Emissions** menu option. HARP will then display a list of all of the pollutants emitted by the facility and their annual emissions (lbs/yr), as shown in the following example. The pollutants are ordered alphabetically, except that the criteria pollutants always appear at the top of the list.



pol	poln	totalems
11101	Particulate Matter	0.15
85101	Particulate Matter 10 Microns or less	0.135
1016	Arsenic compounds (inorganic)	1.2
50000	Formaldehyde	1
51796	Urethane	225
75092	Methylene chloride (Dichloromethane)	0.5
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin	0.00000001
7664417	Ammonia	100
7782505	Chlorine	1200
35822469	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin	0.00000001
72918219	1,2,3,7,8,9-Hexachlorodibenzofuran	0.00000001

5.20 Sensitive Receptors

Sensitive receptor data is edited in the sensitive receptor-editing window, which is accessed by selecting **Edit Data/Sensitive Receptors** from the main menu. For each sensitive receptor, you are required to provide the location (UTM coordinates) and the residential and working populations. Sensitive receptor data is used in the prioritization calculations and the risk assessment modules.

When you add a new receptor by selecting the **Add** menu option, you will be prompted for a COABDIS (County, Air Basin, District) and a new receptor ID. IDs must be unique within each COABDIS.

For a detailed tutorial on editing sensitive receptor data, refer to section 4.4.8.

Edit Sensitive Receptors
 Add Save Delete Next Previous First Last List Help Exit

Receptor 1 (MY RECEPTOR)

Receptor identification

	Name	ID
Receptor	MY RECEPTOR	1
County	SAN DIEGO	37
Air Basin	SAN DIEGO COUNTY APCD	SD
District	SAN DIEGO	SD
Group Name	TUTORIAL	

Receptor properties

Receptor Type (any string up to 8 characters)	SCH	Population (res.)	20
		Population (wk.)	5

Location

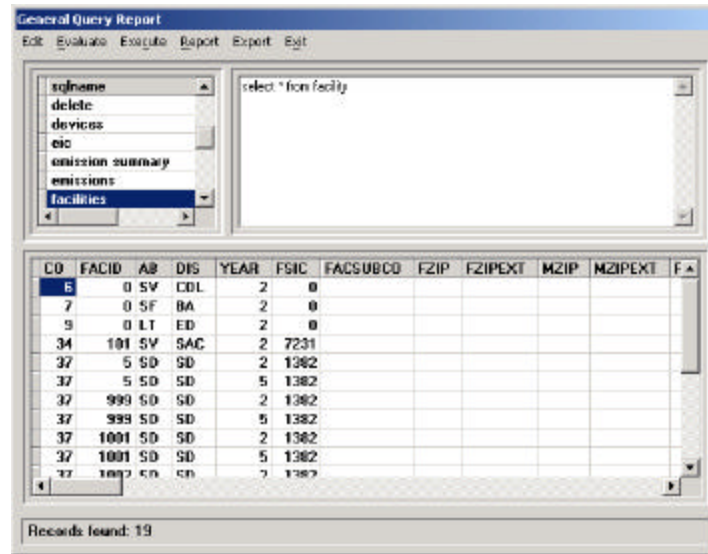
UTM East (km)	475	Datum	NAD27	Change Coordinate System
UTM North (km)	3633	Coord. System	UTM	
Units	km	Zone	11	
		Spheroid	CLARKE1866	

5.21 General Query

The general query report is used to search the database in arbitrary ways, to generate reports, and to export data from any of the HARP tables to an ASCII.5 file in either comma-delimited or tab delimited format.

Using the general query function requires some knowledge of Structured Query Language (SQL). If you are unfamiliar with SQL, a good place to start is the on-line help for Microsoft Access. There are also numerous reference books published on SQL for all levels of experience. The advantages of using SQL are that it is a standard language that is common to almost all databases, and it is completely general. With SQL it is possible to retrieve any data in the database with a single line query. In most cases the query expression will be fairly short.

The following figure shows the general query report window. The remainder of this section describes how to use it.



The general query window contains three sub-windows: 1) the upper left sub-window is a list of saved queries; 2) the upper right window contains the editable text of the currently selected query; 3) the lower window contains the results of evaluating a query.

You may create a query to generate a report, then save this query in the database so that you can produce the same report in the future without retyping the query. Each saved query is given a name when it is saved. The names of all saved queries are listed in the upper left sub-window. To recall a query, simply click on its name in the list. The text of the query will then appear in the edit window in the upper left corner. Any changes that you make to the query are automatically saved when you move to another query or exit the window. To display the results of a query, select the **Evaluate** menu option.

Queries must refer to fields and tables in the database. Appendix C contains a description of the most commonly used tables and fields.

The following is a list of the menu options for this window and their functions.

- Edit/New** This menu option creates a new query in the database. You will be prompted for the name of the query, and the edit window will be cleared.
- Edit/Save** This menu option will cause changes to the current query to be saved immediately. Changes are also saved when you move to a different query or exit the general query window.
- Edit/Delete** This will cause the current query to be deleted from the database.
- Evaluate** This will cause the displayed query to be evaluated, and the results to be displayed in the lower portion of the window.
- Report/Build Report** This causes the current query to be evaluated, and the results to be written to a tab-delimited text file named TABBED.TXT, located in the same directory as HARP. The file is then displayed in a print preview window from which it can be printed.

<i>Report/ View Last Report</i>	This causes the most recent report generated with the Report/Build Report menu option, to be displayed in a print preview window from which it can be printed.
<i>Export/ Export to CSV File</i>	This causes the displayed query to be evaluated and the results to be exported to a comma-delimited text file (CSV stands for “comma separated variables”). CSV files can be imported into most spreadsheet programs.
<i>Export/ Export to Tabbed File</i>	This causes the displayed query to be evaluated and the results to be exported to a tab-delimited text file. Tab-delimited files can be imported into most spreadsheet programs.

5.22 Update Fixed Tables

This utility is used to update certain “fixed” tables in the database with new data provided by ARB. From time to time, ARB may revise certain tables containing fixed codes, for example, the SIC and SCC tables. When this happens, an update will be published by ARB on their web site <http://www.arb.ca.gov/>. To update your HARP database with this new information, first download the file. Then select ***Utilities/Update Fixed Tables*** from the HARP menu. You will be prompted for the name of the update file, HARP will then proceed to read the file and update your HARP database. If you have more than one HARP database file, then you should update each of them.

5.23 Upgrades

The information in the following sections applies to users of CEIDARS-Lite. CEIDARS-Lite is the emissions inventory module of HARP and was released previously to the full version of the HARP software. For more information on CEIDARS-Lite see section 5.2.

5.23.1 Compatibility With Previous Versions

The structure of the HARP database changed substantially in version 14.08, and again in version 21.01. The changes in version 21.01 were done for compatibility with the new CEIDARS 2.5 database that is now used by ARB. HARP provides a way to easily convert your old database to the new structure. This conversion works for all versions of HARP back to version 11.10. You must do this conversion in order for the new features of HARP to work. Failure to convert you database may cause the program to fail at various points.

5.23.2 Converting The HARP Database From An Older Version

This section describes what you should do if you are installing HARP on a machine where you have an earlier version of HARP already installed. If you have never installed HARP before, then you can skip this section.

When you run the new version of HARP, you should first check the name of the database file that is opened (select Help/Database Info from the menu). Depending on which version of

HARP you had previously installed, HARP may open your old database file or it may open the new file called HARP.MDB.

If your old database file is not opened, then you should open it by selecting ***File/Open Database*** from the menu. HARP will prompt you with a reminder that the database format is outdated.

You should immediately select ***Utilities/Upgrades/Upgrade Database*** from the menu. HARP will then convert your database to the new file, and tell you when it is done. You must then open the new database file in order to use it. The name of the new database file will be the same as your previous database file, except it will have “_2103” appended to the name (which just indicates that the new database format is compatible with HARP version 21.03 and later). You may, if you wish, use Windows Explorer to first rename the file to something that is easy for you to remember. To open the new database file after conversion, select ***File/Open Database*** from the menu.

One of the changes that occurred between version 11.10 and version 14.03 was that building and property data in the later versions is segregated by year. Because of this, if you are upgrading from a version of HARP prior to version 14.03, you must perform one more step to recover building and property data (if you have entered any). If you have not previously entered building and property data, then you may skip the rest of this section.

All building and property data that was in your old database will be stored under year zero in the new database. Because the previous version of the database did not identify building and property data with any particular year, there is no way for HARP to know where to put it, so year zero is chosen arbitrarily.

First use the ***Multiyear*** window to change to the reporting year where your data is stored. Then select ***Utilities/Upgrades/Duplicate Building and Property Data*** from the menu. When prompted, enter 0 (zero) for the source year, and enter the current year for the target year. All building and property data will then be copied from the year zero (which came from the previous database) to the current year.

You should repeat this procedure if your old database contained data for multiple reporting years. In other words, for each year for which you have emissions data, first use the ***Multiyear*** window to change to that reporting year, and then copy the building and property data from year zero to that year.

5.23.3 Updating Fixed Tables

You only need to do this step if you are upgrading from a previous version of the HARP program. Check the name of the update file that is on the CD (or the name of the file that you downloaded). If you have already applied this update file to your current database, then you do not need to repeat the process. If you are in doubt, it does not harm to apply an update more than once.

The fixed tables in the HARP database contain data provided by ARB, such as SCC and SIC codes and pollutant IDs. If you are upgrading from a previous version of HARP, the following procedure will update the fixed tables in your database with the most recent data provided by CARB

1. Run HARP by clicking on the HARP icon on your Windows desktop.
2. From the main menu, select Utilities/Update Fixed Tables
3. When prompted for a files name, select the file that is located in the HARP\TableUpdates directory on the CD. (If you have downloaded the table update file, select the file from wherever you placed it on your hard disk.)
4. You will be prompted with the question: “do you want to make a backup of your database”. I recommend answering Yes. You can always return to the backup copy later if you need to. The backup copy is rather large though, so you can skip this if you are short of disk space.
5. Click OK. The update will proceed and you will be told when it is done.